FIG. 1

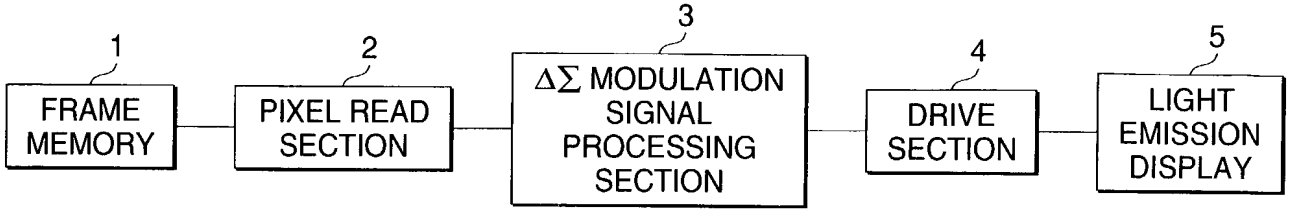

FIG. 2A

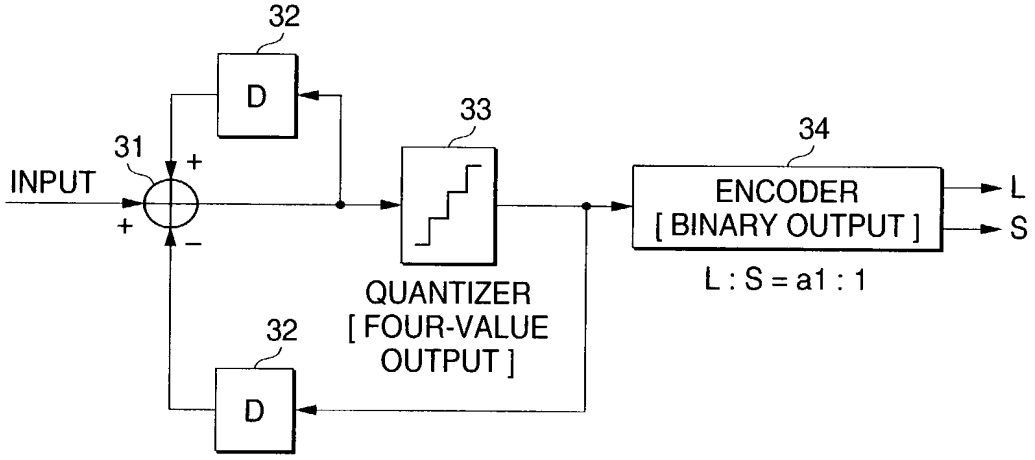

FIG. 2B

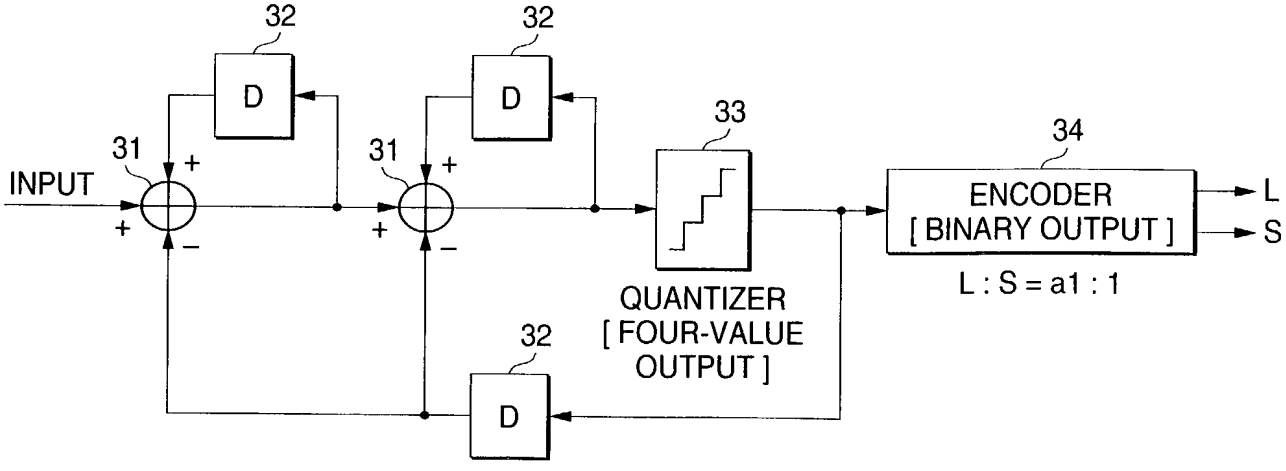

FIG. 3A

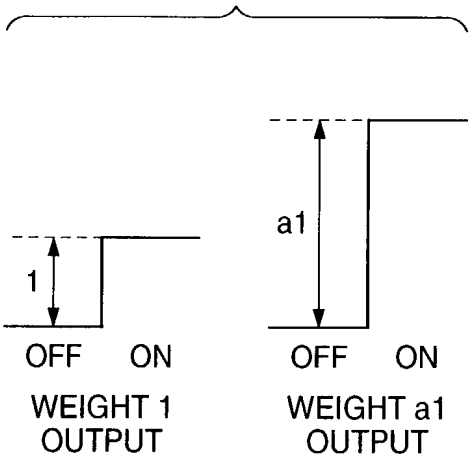

FIG. 3B

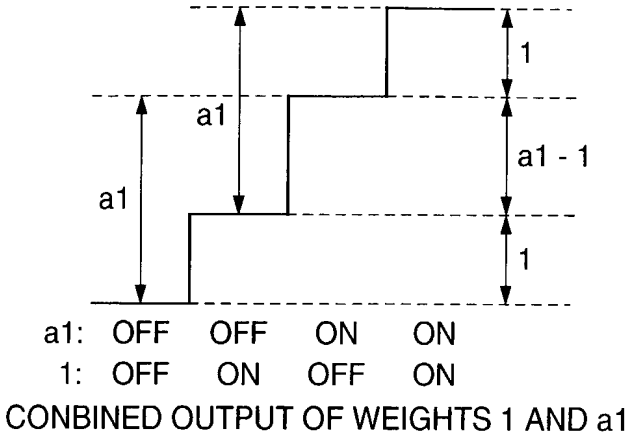

FIG. 4

WEIGHT RATIO OF TWO OUTPUTS	1 : a1 WHERE a1 > 1
INPUT RANGE: x1 TO x2 (AS CONVERSION OF EIGHT BITS: 0 TO 255)	-127.5 TO +127.5 (CENTER IS 0.0 AND WIDTH IS 255)
FOUR VALUES OF QUANTIZER OUTPUT y1, y2, y3, y4	AS PEAK-TO-PEAK VALUE [y1, y4] = [x1 - α, x2 + α] SET A LITTLE WIDER THAN INPUT AS INTERMEDIATE VALUES y2 AND y3 ARE SET SO THAT (y4 - y1) : (y3 - y1) : (y2 - y1) = (a1 + 1) : a1 : 1
THREE LEVELS OF QUANTIZER THRESHOLD z1, z2, z3	z1 = (y1 + y2) / 2 z2 = (y2 + y3) / 2 z3 = (y3 + y4) / 2 SET TO MIDDLE POINT OF LEVEL DIFFERENCE

FIG. 5

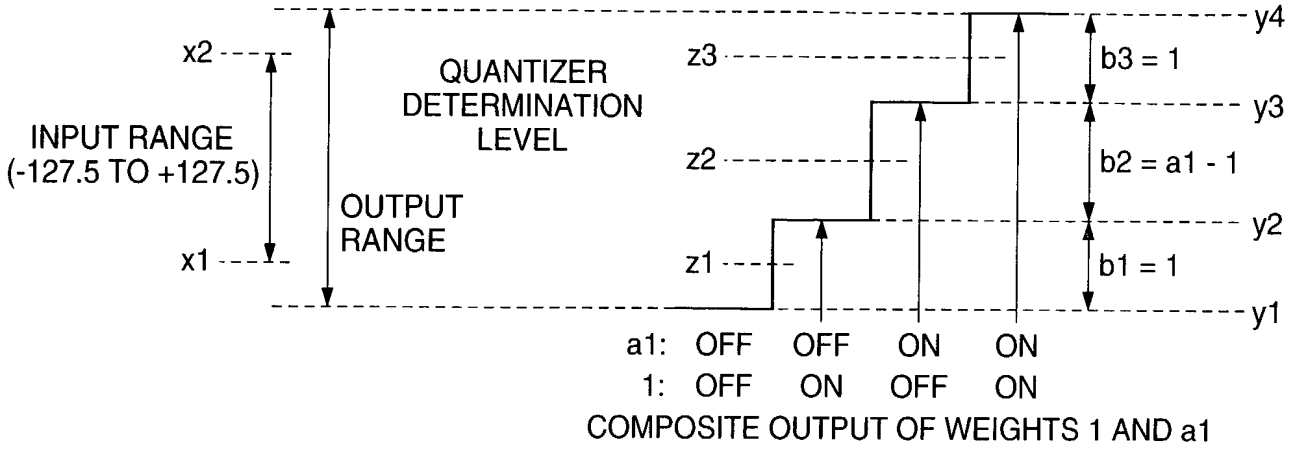

FIG. 6A

WHEN a1 = 2

b1 : b2: b3	1 : 1 : 1
x1, x2	-127.5, +127.5
y1, y2, y3, y4	IF THE PEAK-TO-PEAK VALUE IS, FOR EXAMPLE, [y1, y4] = [-130.5, +130.5] OTHERS ARE DETERMINED [y2, y3] = [-43.5, +43.5] IN CONCLUSION, [y1, y2, y3, y4] = [-130.5, -43.5, +43.5, +130.5]
z1, z2, z3	-87.0, 0.0, +87.0

FIG. 6B

WHEN a1 = 4

b1 : b2: b3	1 : 3 : 1
x1, x2	-127.5, +127.5
y1, y2, y3, y4	IF THE PEAK-TO-PEAK VALUE IS, FOR EXAMPLE, [y1, y4] = [-132.5, +132.5] OTHERS ARE DETERMINED [y2, y3] = [-79.5, +79.5] IN CONCLUSION, [y1, y2, y3, y4] = [-132.5, -79.5, +79.5, +132.5]
z1, z2, z3	-106.0, 0.0, +106.0

FIG. 7A

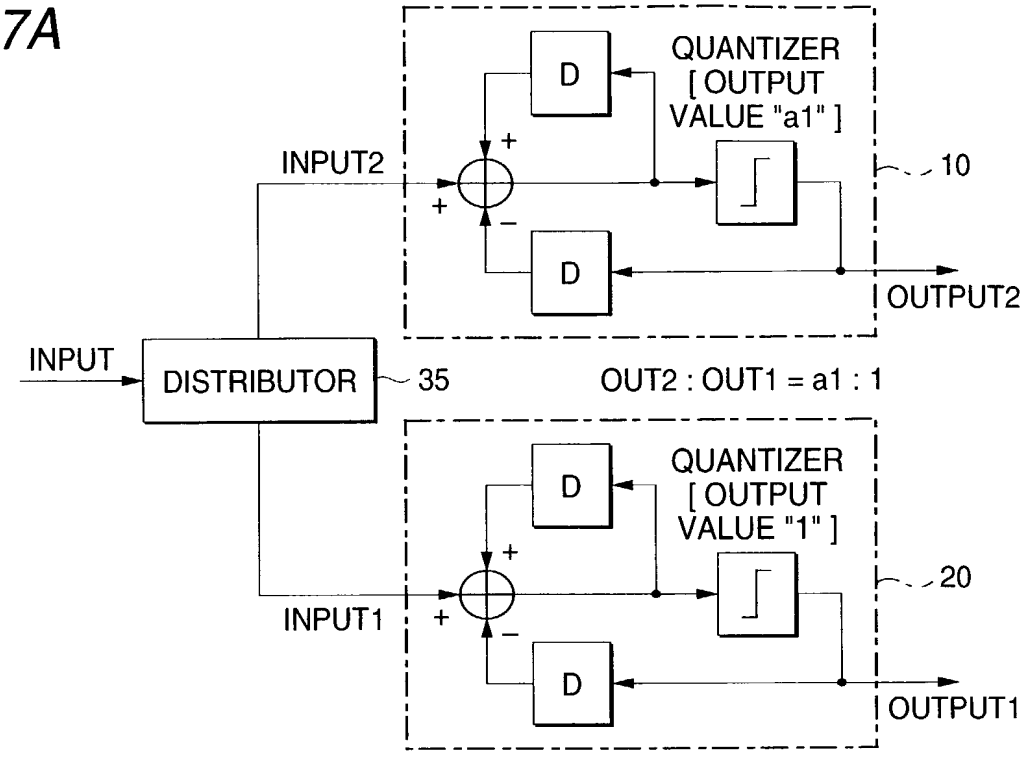
D
QUANTIZER
[OUTPUT
VALUE "a1"]
INPUT2
10
OUTPUT2
INPUT
DISTRIBUTOR
35
OUT2 : OUT1 = a1 : 1
QUANTIZER
[OUTPUT
VALUE "1"]
20
INPUT1
OUTPUT1

FIG. 7B

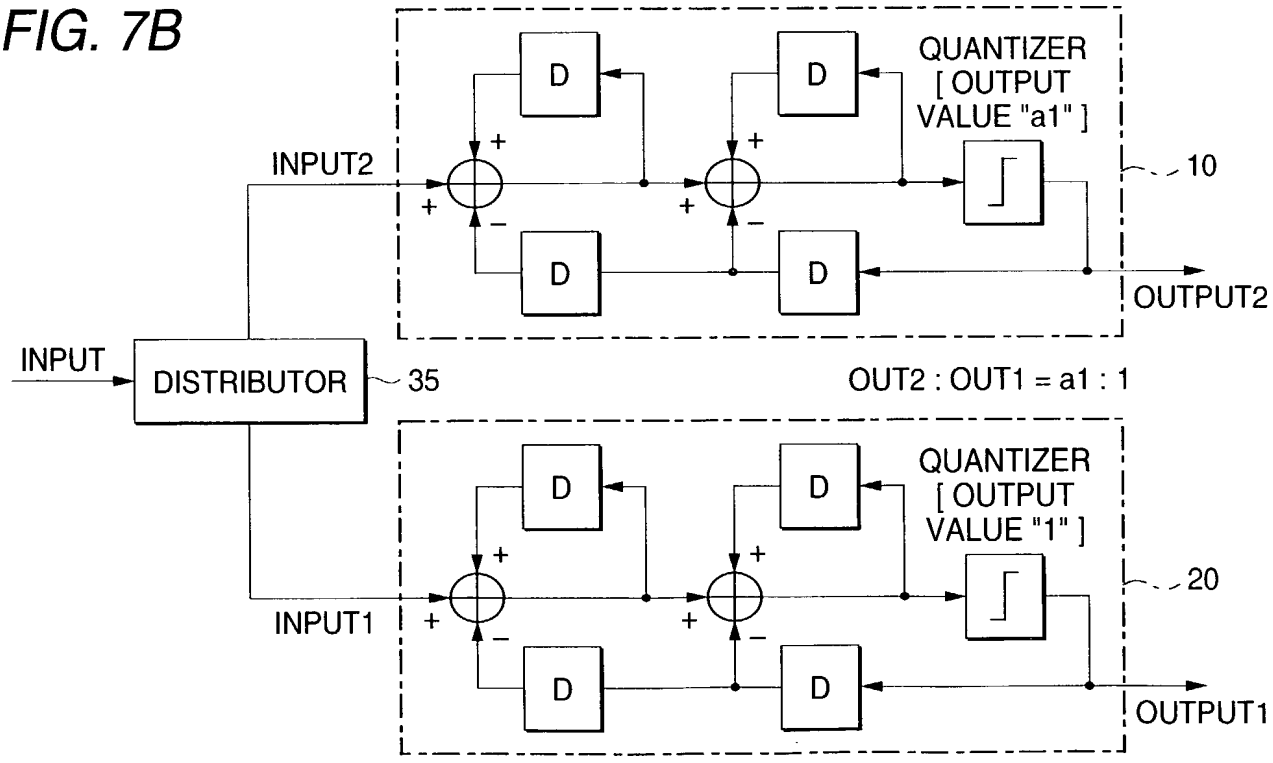
D
QUANTIZER
[OUTPUT
VALUE "a1"]
INPUT2
10
OUTPUT2
INPUT
DISTRIBUTOR
35
OUT2 : OUT1 = a1 : 1
QUANTIZER
[OUTPUT
VALUE "1"]
20
INPUT1
OUTPUT1

FIG. 8A

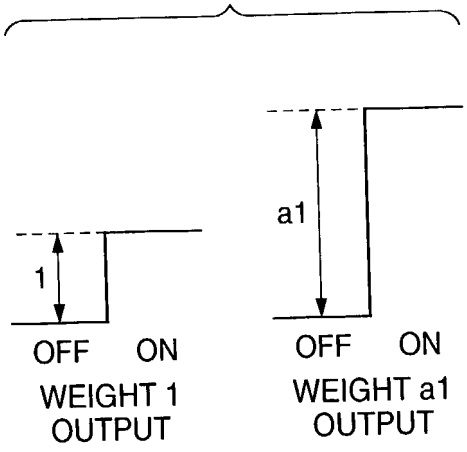

FIG. 8B

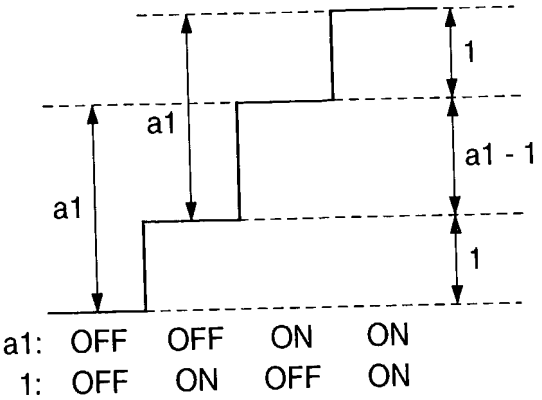

FIG. 9

WEIGHT RATIO OF TWO OUTPUTS	1 : a1 WHERE a1 > 1
INPUT RANGE: x1 TO x2 (AS CONVERSION OF EIGHT BITS: 0 TO 255)	-127.5 TO +127.5 (CENTER IS 0.0 AND WIDTH IS 255)
FOUR VALUES OF QUANTIZER OUTPUT IN METHOD 1 y1, y2, y3, y4 (AS REFERENCE VALUES TO SET p1, p2, q1 AND q2)	AS PEAK-TO-PEAK VALUE [y1, y4] = [x1 - α, x2 + α] AS INTERMEDIATE VALUES y2 AND y3 ARE SET SO THAT (y4 - y1) : (y3 - y1) : (y2 - y1) = (a1 + 1) : a1 : 1
TWO VALUES OF WEIGHT 1 QUANTIZER OUTPUT p1, p2 THRESHOLD LEVEL pz1	p1 = - (y2 - y1) / 2 p2 = + (y2 - y1) / 2 pz1 = 0.0 CENTER VALUE OF p1 AND p2
TWO VALUES OF WEIGHT a1 QUANTIZER OUTPUT q1, q2 THRESHOLD LEVEL qz1	q1 = - (y3 - y1) / 2 q2 = + (y3 - y1) / 2 qz1 = 0.0 CENTER VALUE OF q1 AND q2

FIG. 10A

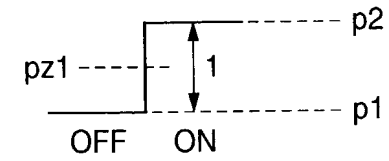

FIG. 10B

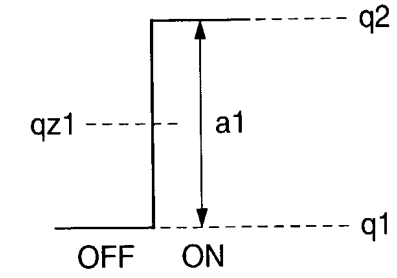

FIG. 11A

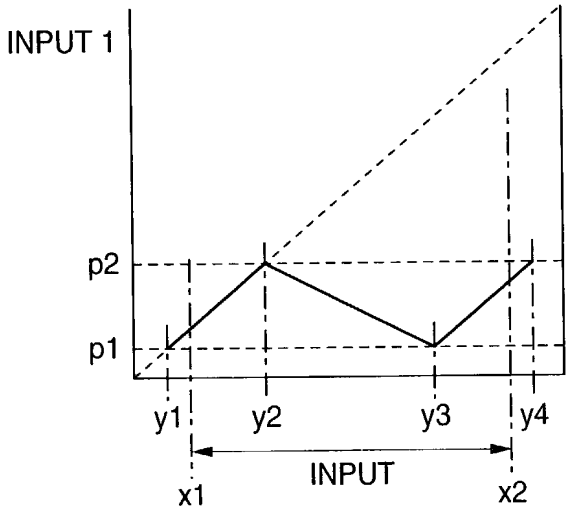

FIG. 11B

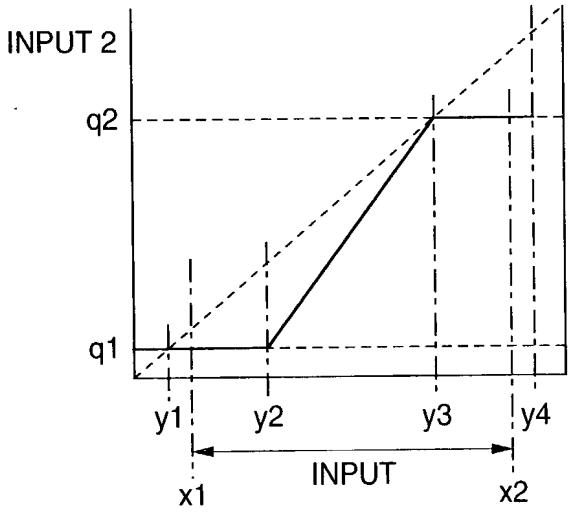

FIG. 12A

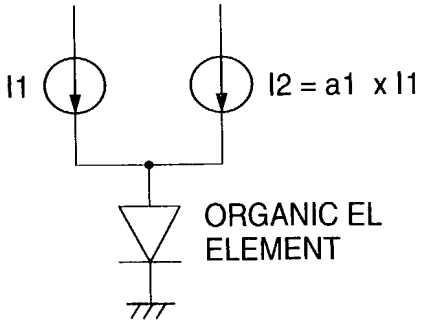

FIG. 12B